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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,003	05/20/2008	Geoffrey Harding	DE040057	8992

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EXAMINER

SONG, HOON K

ART UNIT	PAPER NUMBER
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2882

MAIL DATE	DELIVERY MODE
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04/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/598,003	Applicant(s) HARDING ET AL.	
	Examiner HOON SONG	Art Unit 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 and 10 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-8 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/27/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

Claims 7-9 are objected to because of the following informalities:

In claims 7 and 8 at line 1, "it" and "its" are unclear.

In claim 9 line 12, "those" is unclear.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Annis et al. (US 4839913).

Regarding claim 1, Annis teaches a device for mapping the distribution of an XRF marker in a body volume, comprising:

an X-ray source 10 for the emission of a beam of rays, said beam comprising a first ray component with a quantum energy above the K-edge of the XRF marker and a second ray component with a quantum energy below the K-edge of the marker (column 8 lines 5-45);

a detector 60 for the detection of secondary radiation from the body volume, said detector being located outside the beam of rays of the X-ray source;

means for adjusting (filters) the intensity ratio between the first and second ray components in the beam of rays (column 8 lines 5-45).

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Regarding claim 2, Annis teaches the means for adjusting the intensity ratio include a filter removably located in the beam of rays (column 8 lines 5-45).

Regarding claim 3, Annis teaches the filter contains the material of the XRF marker or is made there from (column 8 lines 5-45).

Regarding claim 5, Annis teaches in that the first ray component is represented by the $K_{\alpha 1}$ -line and the second ray component is represented by the $K_{\alpha 2}$ -line of an element (column 8 lines 5-45).

Regarding claim 6, Annis teaches the detector is capable of the location-resolved and/or energy-resolved measurement of the secondary radiation (column 8 lines 5-45).

Regarding claim 7, Annis teaches it comprises a further detector located in the beam of rays and capable of the location-resolved measurement of transmission radiation through the body volume (figure 5).

Regarding claim 8, Annis teaches its components are coupled to one another and together capable of pivoting about an axis of rotation (figure 5).

Allowable Subject Matter

Claims 9-10 are allowed over prior art.

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 4, the prior art fails to teach the first ray component and/or the second ray component are/is monochromatic or quasi-monochromatic, the quantum energy of the ray

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component deviating by less than 10%, preferably by less than 3%, from the K-edge of the XRF marker.

Regarding claims 9-10, the prior art fails to teach a method for determining the distribution of an XRF marker in a body volume by irradiation of the body volume with a beam of rays with a first ray component with a quantum energy above the K-edge and a second ray component with a quantum energy below the K-edge of the XRF marker, measurement of the resulting first secondary radiation from the body volume irradiation of the body volume with the beam of rays with a different intensity ratio between the first and second ray components, measurement of the resulting second secondary radiation from the body volume, determination of those components of the secondary radiation which are due to the fluorescence of the XRF marker by comparing the first and second secondary radiations as claimed in independent claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOON SONG whose telephone number is (571)272-2494. The examiner can normally be reached on 10:30 AM - 7 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoon Song/

Primary Examiner, Art Unit 2882